

HIGH BANDWIDTH FEED-FORWARD OSCILLATOR

ABSTRACT

A high bandwidth, feed-forward oscillator generates a ramp or sawtooth voltage for controlling the operation of a pulse width modulator-based, switched DC power supply circuit. The oscillator is operative to effectively immediately adjust the slope of each rising and falling portion of the ramp/sawtooth signal, as necessary, in proportion to the magnitude of the input voltage, while maintaining the frequency of the ramp waveform effectively constant. A comparator network establishes a difference between peak and valley portions of the sawtooth in accordance with input voltage. In response to a change in input voltage a control circuit modifies the value of the difference between the peak and valley portions to define a new set of respective peak and valley portions $V_{\text{peak}_{\text{NEW}}}$ and $V_{\text{valley}_{\text{NEW}}}$, and immediately causes the sawtooth waveform to transition to the new set of respective peak and valley portions $V_{\text{peak}_{\text{NEW}}}$ and $V_{\text{valley}_{\text{NEW}}}$ at said prescribed frequency.